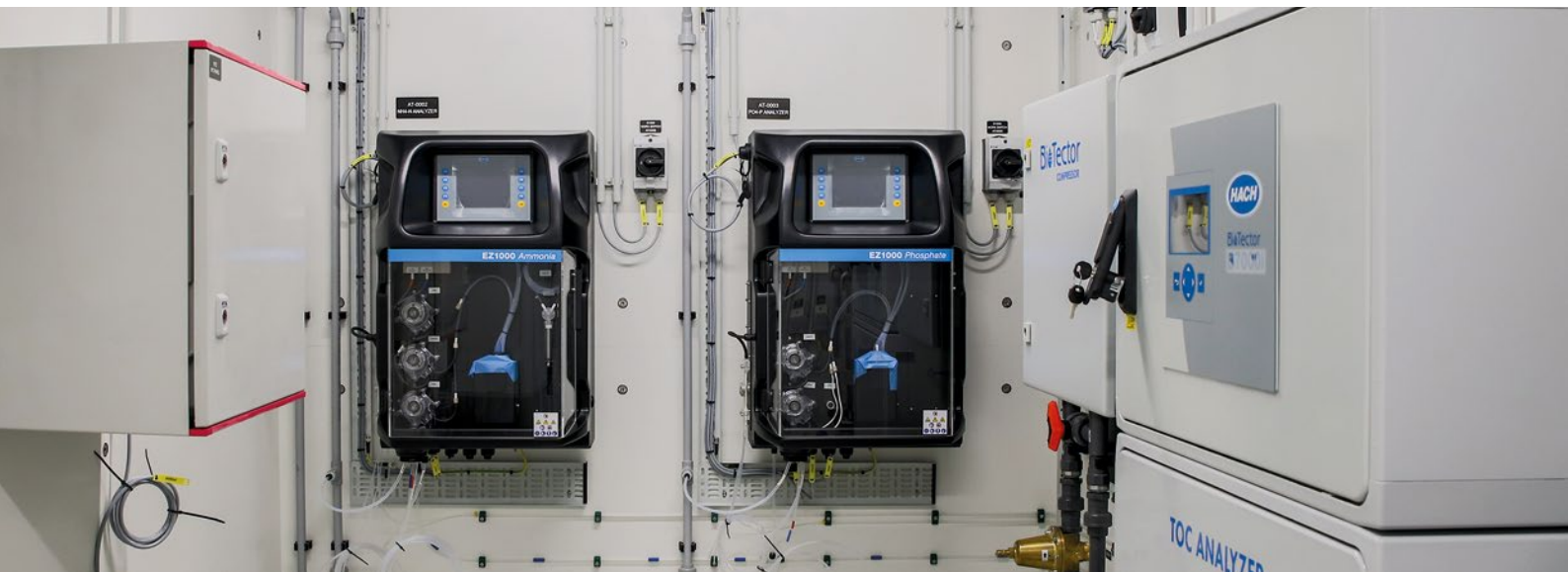


Monitoring of Wastewater from Paper Production



Objective

Process optimisation, water reuse & environmental compliance

Parameters

- Ammonium
- Ortho-Phosphate
- TOC (Total Organic Carbon)

Integrated system consisting of:

- AnaShell type AS4500 insulated analytical shelter (2 m x 4 m) with H-AC unit, lightning protection
- BioTector TOC analyser with compressor
- EZ Ammonium and Phosphate analysers with EZ9020 filtration system
- RTC-CNP software module, SC Controller
- Bespoke sample preconditioning panel

Problem

The wastewater from paper production has a high organic load and is treated in order to be partially re-used and partially discharged directly into a river. Prior to treatment it is necessary to address the nutrient imbalance: excess Carbon, and very low levels of Phosphorus and Nitrogen. Based on the analysis of grab samples, nutrients are added manually to achieve a better C:N:P ratio for biological treatment. The customer recognised the need for process optimisation, but did not have a suitable building for the analytical equipment.

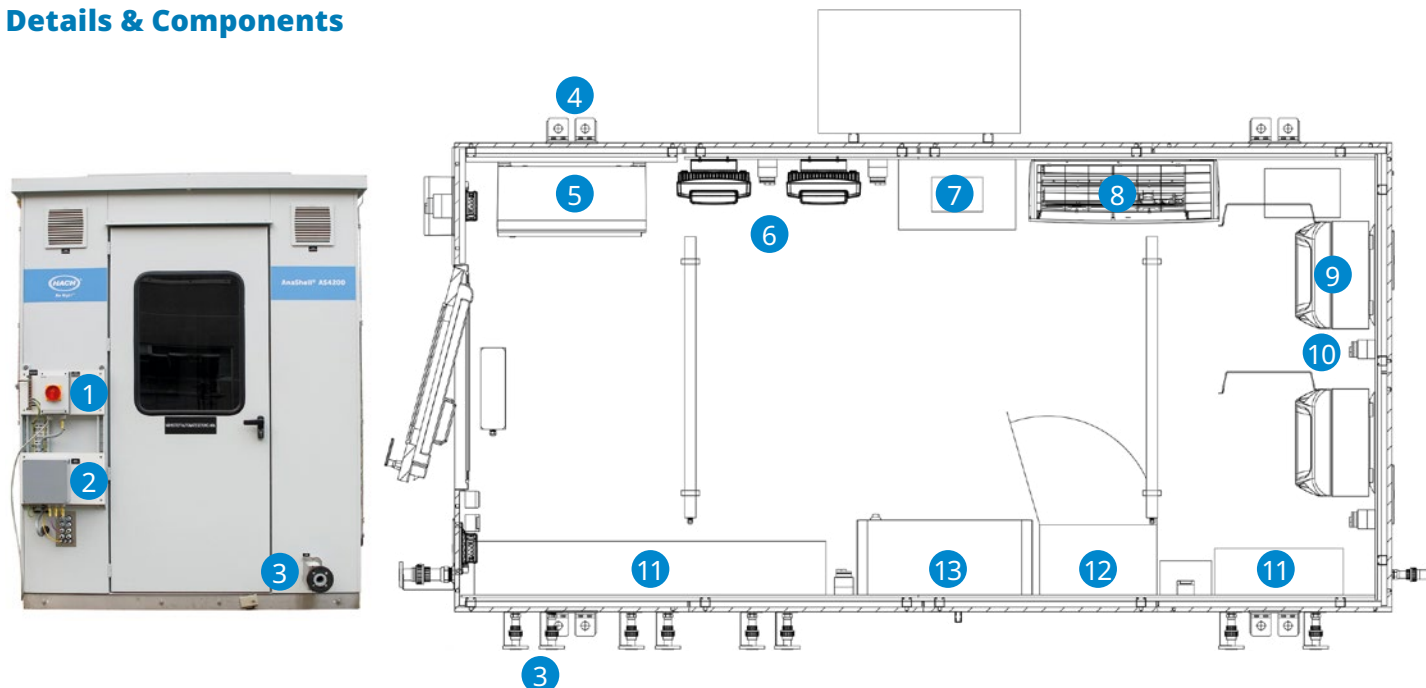
Solution

The Hach[®] inhouse engineering team designed a turnkey monitoring solution for the influent and effluent of the anaerobic stage. A weather and corrosion resistant AnaShell analytical shelter provided enough space for sample preconditioning systems, analysers, the SC controller and RTC-CNP control module. All instruments were premounted and the entire shelter underwent a factory acceptance test (FAT) prior to shipment for instant and sustainable operational reliability on site.

Benefits

- Fast payback due to lower nitrogen levels in plant effluent.
- Fast realisation of the project with a single source supplier.
- Option to move the shelter to a new location when the plant is remodelled in a few years.
- Stable, laboratory-like conditions for the instruments to achieve high accuracy and uptime.

Details & Components



- 1 Main power switch
- 2 Signal junction box
- 3 Sample inlet / outlet flanges, protected by stainless steel mounting brackets
- 4 Lifting / mounting brackets
- 5 Power distribution panel
- 6 SC Controller
- 7 RTC-CNP module
- 8 Air conditioning unit
- 9 EZ analyser
- 10 Individual maintenance switch per instrument
- 11 Sample preconditioning panel
- 12 Oilfree compressor
- 13 BioTector analyser
- 14 Equipment grounding
- 15 Lightning protection